

REMARKS

Claims 8-20 are currently pending based on the amendment herein.

The Examiner rejected claims 8-20 under 35 U.S.C. §103(a) as being unpatentable over Wu et al. (U.S. Patent No. 5,994,747) in view of Houston (U.S. Patent No. 6,045,625).

Applicants respectfully traverse the §103 rejections with the following arguments.

35 U.S.C. §103

Claims 8-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Wu et al. (U.S. Patent No. 5,994,747) in view of Houston (U.S. Patent No. 6,045,625).

The Examiner alleges that "In regards to claim 8, Wu et al. ("Wu") discloses the following:

- a) a semiconductor wafer overlying a semiconductor layer (2) (For Example: See Figure 9);
- b) a first recess and a second recess formed through the semiconductor layer (For Example: See Figure 9);
- c) a body (6) formed from the semiconductor layer situated between the first recess and the second recess, the body comprising a top body surface and a bottom body surface that defines a body thickness (For Example: See Figure 9); and
- d) a source structure (14) formed into the first recess, the source structure comprising a source region (For Example: See Figure 9);
- e) a drain region formed into the second recess, the drain structure comprising a drain region (For Example: See Figure 9); and
- f) a top portion of the source structure and a top portion of the drain structure are within and abut the body thickness (For Example: See Figure 9).

In regards to claim 8, Wu fails to disclose the following:

- a) a semiconductor layer overlying a buried insulator having at least two layers.

However, Houston discloses a semiconductor with an insulation layer that has various layers (For Example: See Figure 5e). It would have been obvious to one having ordinary skill in the art at the

time the invention was made to modify the semiconductor device of Wu to include an insulation layer that has various layers as disclosed in Houston because it aids in eliminating warping (For Example: See Column 1 Lines 49-62) ”.

As to claim 8, Applicants respectfully contend that Wu and Houston do not individually or collectively teach or suggest each and every feature of claim 8. For example, Wu and Houston do not teach or suggest the features of “A transistor comprising: semiconductor wafer comprising a semiconductor layer overlying a buried insulator having at least two layers; a first recess and a second recess formed through the semiconductor layer and a first layer of the buried insulator; a body formed from the semiconductor layer situated between the first recess and the second recess, the body comprising a top body surface and a bottom body surface that define a body thickness; a source structure formed into the first recess, the source structure comprising a source region; and a drain structure formed into the second recess, the drain structure comprising a drain region; wherein a top portion of the source structure and a top portion of the drain structure are within and **abut** the body thickness.” (emphasis added). Wu and Houston do not teach or suggest that a body formed from the semiconductor layer **abuts** (i.e., borders or touches) a source and drain structure. In contrast, Wu teaches a semiconductor device with a source and drain structure bordering a gate oxide (see Wu, fig. 9). The source and drain structure in Wu do not **abut** the body formed from the semiconductor layer as in Applicant’s claim 8. Houston nearly teaches a trench 40 that extends through a first silicon dioxide layer 14a, a second silicon dioxide layer 14c, and an intermediate layer 14b “having a thermal co-efficient of expansion similar to that of the silicon substrate 12. Thus applicants maintain that Wu and Houston do not teach or suggest the aforementioned features of claim 8 and that claim 8 is in condition for

allowance. Since claims 9-14 depend from claim 8, Applicants contend that claims 9-14 are likewise in condition for allowance.

Additionally, Applicants contend that the Examiner has not established that Wu may be combined with Houston for the purpose of rejecting claim 8 under 35 U.S.C. §103(a). The only basis that the Examiner provides for combining Wu with Houston is that "It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Wu to include an insulation layer that has various layers as disclosed in Houston because it aids in eliminating warping"(emphasis added). In response, Applicants contend that Houston teaches a structure comprising a multilayer structure on a silicon substrate 12. The multilayer structure of Houston comprises an intermediate layer 14b between two insulating layers 14a and 14c. In order to eliminate warping, the thermal coefficient of expansion of the intermediate layer 14b substantially matches the thermal coefficient of expansion of the silicon substrate 12 more nearly than does the two insulating layers 14a and 14c, thereby preventing warping of the structure (see Houston, col. 2, lines 47-55). An elimination of warping is not applicable to the structure of Wu or Applicant's claim 8 because Wu does not even suggest a thermal coefficient of expansion mismatch between a silicon substrate and an insulator and Applicant's claim 8 does not require any coefficient of thermal expansion relationship. Therefore, Applicant's contend that the Examiner's reason for modifying Wu with Houston is not persuasive.

The Examiner alleges that "In regards to claim 15, Wu discloses the following:

a) a silicon layer (For Example: See Figure 9);

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- b) a first recess and a second recess formed through the semiconductor layer (For Example: See Figure 9); and
- c) a body formed from the semiconductor layer situated between the first recess and the second recess, the body comprising a top body surface and a bottom body surface that defines a body thickness (For Example: See Figure 9).

In regards to claim 15, Wu fails to disclose the following:

- a) a silicon layer overlying on a buried insulator that comprises a first buried insulator on a second buried insulator different from the first buried insulator layer, wherein the first buried insulator layer is at least as thick as the silicon.

However, Houston discloses a semiconductor with an insulation layer that has various layers (For Example: See Figure 5e and Column 2 Lines 43-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Wu to include an insulation layer that has various layers as disclosed in Houston because it aids in eliminating warping (For Example: See column 1 Lines 49-62)".

As to claim 15, Applicants respectfully contend that the Examiner has not established that Wu may be combined with Houston for the purpose of rejecting claim 15 under 35 U.S.C. §103(a). The only basis that the Examiner provides for combining Wu with Houston is that "It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Wu to include an insulation layer that has various layers as disclosed in Houston **because it aids in eliminating warping**" (emphasis added). In response, Applicants contend that Houston teaches a structure comprising a multilayer structure on a silicon substrate 12. The multilayer structure of Houston comprises an intermediate layer

14b between two insulating layers 14a and 14c. In order to eliminate warping, the thermal coefficient of expansion of the intermediate layer 14b substantially matches the thermal coefficient of expansion of the silicon substrate 12 more nearly than does the two insulating layers 14a and 14c, thereby preventing warping of the structure (see Houston, col. 2, lines 47-55). An elimination of warping is not applicable to the structure of Wu or Applicant's claim 15 because Wu does not even suggest a thermal coefficient of expansion mismatch between a silicon substrate and an insulator and Applicant's claim 15 does not require any coefficient of thermal expansion relationship. Therefore, Applicant's contend that the Examiner's reason for modifying Wu with Houston is not persuasive. Thus applicants contend that Wu may not be combined with Houston for the purpose of rejecting claim 15 under 35 U.S.C. §103(a). Based on the preceding arguments, Applicants respectfully maintain that claim 15 is not unpatentable over Wu et al. in view of Houston, and that claim 15 is in condition for allowance. Since claims 16-20 depend from claim 15, Applicants contend that claims 16-20 are likewise in condition for allowance.

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims 8-20 and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below.

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